

REMARKS

A. Summary of the Amendments

The present application now comprises thirty-one (31) claims, numbered 1, 3-18, 20-21, 23-33 and 35.

Claim 22 has been cancelled. Claims 2, 19, 34 and 36-38 were previously cancelled.

Claim 35 has been amended to correct a typographical error in the preamble.

No new matter has been added to the application by way of the present response.

B. Rejection of claim 22 under 35 USC 102

On page 2 of the Office Action, the Examiner rejected claim 22 under 35 USC 102(b) as being anticipated by Nystrom et al. (US Patent 5,412,351). It is respectfully submitted that the Examiner's rejection is moot in view of the cancellation of claim 22.

C. Rejection of claims 1, 5-8, 21 and 23-28 under 35 USC 103

On page 3 of the Office Action, the Examiner rejected claims 1, 5-8, 21 and 23-28 under 35 USC 103(a) as being unpatentable over Lätt (US Patent 5,987,304, hereinafter referred to as Lätt) in view of Hill *et al.* (US Patent 6,334,219, hereinafter referred to as Hill). With respect, the Applicant disagrees and submits that claims 1, 5-8, 21 and 23-28 are in allowable form.

Claim 1

Firstly, the Examiner has acknowledged that Lätt does not teach the claimed feature of “control logic coupled to said bandwidth control signal source, said control logic being operative for detecting a change of the bandwidth of the message bearing signal and for causing said bandwidth control signal source to change the frequency of the bandwidth control signal on a basis of the detected change.”

Now, in an attempt to remedy the shortcomings of Lätt, the Examiner has introduced Hill. However, and as set forth herein below, it is respectfully submitted that Hill does not teach the aforesaid feature of claim 1 which, as conceded by the Examiner, is absent from Lätt.

More specifically, in the Office Action, the Examiner has referred to a passage of Hill (column 48, lines 12-54) which reads as follows:

“Referring to FIG. 24, the upstream transmission architecture for the HISU 68 is shown. The IOC control data and the telephony payload data from the CXSU 102 (FIG. 8) is provided to serial ports 182 at a much slower rate in the HISU than in the MISU or HDT transmission architectures, because the HISU supports only 10 DS0+ channels. The HISU upstream transmission architecture implements three important operations. It adjusts the amplitude of the signal transmitted, the timing delay (both symbol and path delay) of the signal transmitted, and the carrier frequency of the signal transmitted. The telephony data and IOC control data enters through the serial ports 182 under control of clocking signals generated by the clock generator 173 of the HISU downstream receiver architecture, and is scrambled by scrambler 184 for the reasons stated above with regard to the MCC downstream transmission architecture. The incoming bits are mapped into symbols, or complex constellation points, including I/Q components in the frequency domain, by bits to symbol converter 186. The constellation points are then placed in symbol buffer 188. Following the buffer 188, an inverse FFT 190 is applied to the symbols to create time domain samples; 32 samples corresponding to the 32 point FFT. A delay buffer 192 is placed on the output of the inverse FFT 190 to provide multi-frame alignment at MCC modem upstream receiver architecture as a function of the upstream synchronization process controlled by the HDT 12. The delay buffer 192, therefore, provides a path delay adjustment prior to digital to analog conversion by the digital to analog converters 194 of the in-phase and quadrature components of the output of the inverse FFT 190. Clock delay 196 provides a fine tune adjustment for the symbol alignment at the request of IOC control data output obtained by extracting control data from the serial stream of data prior to being scrambled. After conversion to analog components by digital to analog converters 194, the analog components therefrom are reconstructed into a smooth analog waveform by the reconstruction filters 198. The upstream signal is then directly up converted by direct converter 197 to the appropriate transmit frequency under control of synthesizer block 195. Synthesizer block 195 is operated under control of commands from an IOC control channel which provides carrier frequency adjustment commands thereto as extracted in the HISU downstream receiver architecture. The up converted signal is then amplified by transmitter amplifier 200, filtered by transmitter filter 202 and transmitted upstream to be combined with other signals transmitted by other ISUs 100. “

A brief commentary is warranted, given that the above passage forms the basis of the Examiner's argument. In particular, it is noted from the above passage that Hill teaches the provision of "carrier frequency adjustment commands" along an "IOC control channel". While there is no expanded discussion of such "carrier frequency adjustment commands" in the above passage of Hill, it is fairly apparent from certain other portions of Hill (e.g., column 19, line 62 and column 37, lines 22-25 and lines 42-44) that Hill's "carrier frequency adjustment commands" would be used to adjust the carrier frequencies of an upstream multicarrier signal, which is of course not the IOC control channel. One also learns from Hill that these carrier frequencies need to be locked to rather precise values in order to maintain orthogonality amongst the data signals in the multicarrier signal. As such, the bandwidth of each signal in the multicarrier signal is fixed, rather than variable, and is certainly not variable as a function of the bandwidth of the data signal being transmitted.

Referring now specifically to claim 1, it will be noted that the claimed control logic is operative for "detecting a change of the bandwidth of the message bearing signal", which causes a change in the frequency of the bandwidth control signal on a basis of the detected change. Quite simply, there is no such "detecting" in Hill. Rather, Hill knows *a priori* the carrier frequencies that need to be used. In fact, Hill requires very precise carrier frequencies to be used so as to reduce interference between data signals transported in an upstream multicarrier signal (*see* Hill, column 20, lines 5-13). As such, Hill does not teach carrier frequency adjustment commands being somehow influenced by detected changes in the bandwidth of the data signal being transmitted upstream. It is worth repeating that Hill's carrier frequencies are fixed, and the carrier frequency adjustment signals (*see* Hill, column 48, line 52) are merely used to ensure compliance with these fixed frequencies.

In summary, therefore, it should be apparent that Hill and Lätt are deficient in similar ways, in that neither reference discloses or suggests detecting a change of the bandwidth of a message bearing signal, ultimately resulting in a change in the frequency of a bandwidth control signal used to vary the bandwidth of the output of a filtering stage used to process the message bearing signal.

In view of the failure of the cited art to teach all of the limitations of claim 1, it is respectfully submitted that a *prima facie* case of obviousness has not been established¹, and the Examiner is respectfully requested to withdraw the rejection of claim 1.

Claims 21 and 23

Claims 21 and 23 contain language similar to that of claim 1 and thus for the same reasons as those set forth in support of claim 1 above, the Examiner is respectfully requested to withdraw the rejection of claims 21 and 23.

Claims 5-8 and 24-28

Claims 5-8 and 24-28 are dependent on either claim 1 or claim 23 and therefore include all of the features of the respective base claim, including those shown above to be absent from the combination of Lätt and Hill. Thus, for the same reasons as those set forth above in support of claims 1 and 23, the Examiner is respectfully requested to withdraw the rejection of claims 5-8 and 24-28.

D. Rejection of Claims 3 and 4 Under 35 USC 103

On page 6 of the Office Action, the Examiner rejected claims 3 and 4 under USC 103(a) as being unpatentable over Lätt (US Patent 5,987,304, hereinafter referred to as Lätt) and Hill *et al.* (US Patent 6,334,219, hereinafter referred to as Hill), and further in view of Liebtreu *et al.* (US Patent 5,721,756, hereinafter referred to as Liebetreu). With respect, the Applicant disagrees and submits that claims 3 and 4 are in allowable form.

¹ For the Examiner to establish a *prima facie* case of obviousness, three criteria must be considered: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings, (2) there must be a reasonable expectation of success, and (3) the prior art references must teach or suggest all of the claim limitations. MPEP §§ 706.02(j), 2142 (8th ed.).

In particular, claims 3 and 4 are dependent on claim 1 and therefore include all of the features of claim 1, including those shown above to be absent from the combination of Lätt and Hill. It is further submitted that these features are absent from Liebetreu, which merely provides a digital data receiver including a tunable analog conditioning circuit, whereby a variety of analog parameters of the tunable analog circuit are responsive to a signal quality indicator obtained from decoded data. As such, Liebetreu does not remedy the shortcomings of Lätt and Hill.

In view of the failure of the cited art to teach all of the claim limitations, it is respectfully submitted that a *prima facie* case of obviousness has not been established, and the Examiner is respectfully requested to withdraw the rejection of claims 3 and 4.

E. Comments on Examiner's Remarks Regarding Allowable Subject Matter

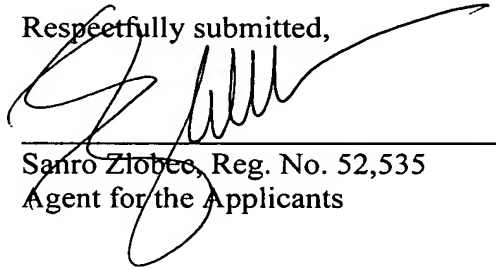
On page 7 of the Office Action, the Examiner indicated that claims 9-18, 20, 29-33 and 35 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Applicant gratefully acknowledges the Examiner's remarks but respectfully submits that reformulation of claims 9-18, 20, 29-33 and 35 is not necessary given that each of these claims depends on a claim that has been argued above as being allowable. The Applicant therefore respectfully requests allowance of claims 9-18, 20 and 29-33.

CONCLUSION

The Applicants are of the view that claims 1, 3-18, 20-21, 23-33 and 35 are in condition for allowance. Favorable reconsideration is requested. Early allowance of the application is earnestly solicited.

If the claims of the application are not considered to be in full condition for allowance, for any reason, the Applicants respectfully request the constructive assistance and suggestions of the Examiner in drafting one or more acceptable claims pursuant to MPEP 707.07(j) or in making constructive suggestions pursuant to MPEP 706.03 so that the application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Respectfully submitted,



Samro Zlobec, Reg. No. 52,535
Agent for the Applicants

Date: June 16, 2006

SMART & BIGGAR
1000 De La Gauchetière Street West
Suite 3300
Montreal, Quebec H3B 4W5
CANADA
Telephone: (514) 954-1500
Fax: (514) 954-1396